

9/2/04 Meeting Notes – Landfill Stability Workgroup
Bluff Conference Room – South Central Region Headquarters

Attending: Sherren Clark (BT²), Bob Ham (UW), Gerard Hamblin (WMWI), Dan Leclaire (WMWI), Gene Mitchell (DNR), John Reindl (Dane County), Jo Spear (JW Spear Associates), Brad Wolbert (DNR)

- I. Website: The group agreed with the idea of posting information from our effort on the DNR website, with the following caveats:

- no personal attributions
- no “works in progress” – products only (meeting notes ok)
- note if product does not have group consensus

DNR will inquire into getting meeting notes posted and report back at our next meeting.

- II. Agenda Repair: The group spent the bulk of the meeting reviewing our purpose and approach in light of what is realistic and implementable. The goal was stated simply as *“put together a product (rule, guidance, or policy) that clearly lays out what operators need to do to meet the proposed requirement for having a landfill stability plan by 1/07.”* One purpose is to enable us to distinguish between sham and legitimate stability plans.

Key points made during the discussion included:

- Need to distinguish between plans for new sites and horizontal expansions, vs existing sites and vertical expansions, which may have fundamental design, operation and location conditions that constrain what can be done by way of stability.
- Differences between *technology-based standards* (as we have been leaning towards up to now) or *performance standards*:
 - We have very little basis for judging the likely effectiveness of technology-based standards in advance.
 - Any technology list we make today must accommodate new technologies.
 - However, the long timeframe for achieving stability makes it difficult to apply a performance standard (other than, say, incineration, which will clearly meet most any standard).
- What is real objective: actually achieve stability in landfills, or simply improve the situation over current practices?
- We lack a measurable definition of stability, i.e., based on measurable characteristics of waste, to form the basis for a performance standard. Rule proposes definitions that are descriptive only.

- Previous group discussions have assumed an iterative process: operator proposes technology-based approach; DNR rules will specify what minimum requirements must be met for this approach; DNR and industry will gain knowledge of the options and their effectiveness; DNR will modify the rules accordingly.
- Performance standard requires a success metric and a *determination* by the DNR that operator has performed adequately. Could be incorporated as conditions in approval of stability plan.
- Measurement does not have to wait til endpoint – assessment of progress should be made as you go, with appropriate adjustments if needed.
- Ideally, economic drivers would reflect likelihood of achieving goal – e.g., very likely (pre-incineration) = low financial responsibility burden on landfill.
- Bioreactors are only technology operator has 100% control over; likely to get mostly, or all, bioreactor proposals; but:
 - not realistic to have all LFs convert to bioreactors in a couple years' time
 - data requirements may be too burdensome
 - current tipping fees don't allow much innovation or room for monitoring costs
- We are trying to change landfilling in Wisconsin from mere repositories to waste processing operations. As with all operations, improvement through time will require tweaking. Metrics will be skimpy at first but will improve. Important to set up process now to ensure this happens.
- LF operators concerned about ultimately having to site an incinerator if original plan doesn't work, even after adjustments, in order to comply with stability requirements. Professional operators can't be in position of having to guess whether they're in compliance.
- Competitive issues exist: one company will invest enough to make its plan work, another, using same technology, will cut corners to save money and still get credit.
- Approval of plan could require demonstration of progress against plan using measured criteria, to ensure plan leads to legitimate level of effort.
- One measurable criterion for success, using data that are already gathered, is *total carbon flux*. Estimate total carbon in LF based on amount and type of waste; measure methane, carbon dioxide and total organic carbon in gas and leachate; tells us approximate extent of degradation. In LF, we know about 70% of carbon is gone at full decomposition. Could also look at biochemical methane potential (BMP) as discussed before. Volatile solids a good, cheap, though inexact, measure.

III. Technology Table:

- Some like having list of options, others feel it's misleading because most options not practicable for landfill operators due to cost or, in case of private operators, lack of control of upstream processes (e.g., recycling requirements, collection).
- Technologies fall into 2 major categories: pre-landfill and in-landfill.
- Table not hierarchical – strategy needs to improve over dry tomb, not necessarily optimize – but goal is stability *within reasonable timeframe*.
- Using table to conduct triage to universe of options, not to limit innovation.

IV. Problem Statement:

- suggestion to add a prefatory paragraph giving background on stability issue and setting out the pathway to moving from storage to treatment. Should indicate why current “good container” approach to SW management is not adequate.
- This will be useful if proposed code requirement for stability plan does not survive to promulgation.

V. Summary and Next Steps: **The group generally agreed on the concepts that, in the future, landfill operators would (1) set out how they'll enhance stability; (2) measure to assess progress; and (3) revise stability plan or tweak implementation based on the measurement. Our group's focus right now is on defining what should be in a stability plan for each potential technology and also in general, to accommodate unforeseen approaches.**

- **An expanded problem statement will be drafted and sent around to the group for comment prior to the next meeting.**
- **Group members will complete the table (Pros, Cons, and Current Status columns) and send their inserts for compilation prior to next meeting.**

Next meeting scheduled for September 30, 1:00, at DNR's South Central Region Headquarters, Bluff Conference Room. Agenda will focus on finishing the technology table and discuss what stability plans would need to include.